WHAT IS CLAIMED IS:

1. A process for generating a knowledge code which is used in a knowledge-based system comprising the steps of:

converting a text which is described in a natural language into a knowledge code; and

inputting said knowledge code into said knowledge-based system, said step of converting said text into said knowledge code comprising the steps of preparing an intermediate knowledge code which represents knowledge of an object field and does not depend on said knowledge-based system, from the description of said text which is described in a natural language in accordance with intermediate knowledge code generating rules and converting said intermediate knowledge code into said knowledge code which can be used in said knowledge-based system in accordance with said knowledge code generating rules.

2. A process for generating a knowledge code which is used in a knowledge-based CAD, comprising the steps of:

converting a design document into a knowledge code; and

inputting said knowledge code into said knowledge-based CAD, said step of converting said design document into said knowledge code comprising the steps of preparing an intermediate knowledge code which represents knowledge of a design object field and does not depend upon said knowledge-based CAD, from the description of said design document which is described in a natural language in

accordance with intermediate knowledge code generating rules and converting said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rules.

5   3.   A process for generating a knowledge code as claimed in claim 2, wherein said step of preparing said intermediate knowledge code comprises the steps of conducting a morphological analysis or syntactic analysis for the description of the design document which is described in a natural language and preparing said 10   intermediate knowledge code which matches morphological information and syntactic information in accordance with said intermediate knowledge code generating rules based upon the morphological information or syntactic information which is obtained by said morphological analysis or said syntactic analysis.

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     4.   A process for generating a knowledge code as claimed in claim 3, wherein at the step of converting said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rules, said knowledge code is a CAD codes used for 20   said knowledge-based CAD, and in order to convert said intermediate presentation code into said CAD code used for a plurality of different knowledge-based CADs, said intermediate knowledge code is converted into a plurality of different CAD codes in accordance with a plurality of different knowledge-based code generating rules.

5.   A process for generating a knowledge code as claimed in claim 4, wherein after the step of converting said intermediate knowledge code into said knowledge code in accordance with said

5   knowledge code generating rules, said knowledge code is reconverted into said intermediate knowledge code by using a knowledge code compiler and further said intermediate knowledge code is converted into different knowledge codes by using different knowledge code generating rules.

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6.   A system for generating a knowledge code used for a knowledge-based system, comprising a knowledge code generator for converting a text which is described in a natural language into a knowledge code and a knowledge code input means for inputting

15   said knowledge code to said knowledge-based system, said knowledge code generator including an intermediate knowledge code generating unit for generating an intermediate knowledge code which represents the knowledge of an object field and does not depend on said knowledge-based system, from the description of the text which is

20   described in a natural language in accordance with intermediate knowledge code generating rules and a knowledge code converting unit for converting said intermediate knowledge code into a knowledge code which can be used in said knowledge-based system in accordance with knowledge code generating rules.

7.   A knowledge code generating system for generating a knowledge code used for a knowledge based CAD as claimed in claim 6, wherein said knowledge code generator comprises an intermediate knowledge code generating unit for generating an intermediate knowledge code which represents the knowledge of design object field and does not depend on said knowledge-based CAD, from the description of the design document which is described in a natural language in accordance with said intermediate knowledge code generating rules and a knowledge code converting unit for converting said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rules of said knowledge-based CAD.

8.   A knowledge code generating system as claimed in claim 7, wherein said intermediate knowledge code generating unit conducts a morphological analysis or syntactic analysis for the description of said design document which is described in a natural language and generates an intermediate knowledge code which matches morphologic information or syntactic information in accordance with said intermediate knowledge code generating rules based upon the morphological information or syntactic information which is obtained by said morphological analysis or said syntactic analysis.

9.   A knowledge code generating system as claimed in claim

8, wherein for converting said intermediate knowledge code into a plurality of different CAD codes in accordance with a plurality of different knowledge code generating rules in said knowledge code converting unit, said intermediate knowledge code is converted into

5   said CAD code used for a plurality of different knowledge-based CADs.

10.   A knowledge code generating system as claimed in claim 9, wherein said knowledge code generator reconverts said knowledge

10   code into said intermediate knowledge code by using a knowledge code compiler after conversion of said intermediate knowledge code into said knowledge code in accordance with said knowledge code generating rule and converts said intermediate knowledge code into different knowledge code in accordance with said knowledge code

15   generating rule.

11.   A process for producing a knowledge code which is used in a knowledge-based system, characterized in that said process comprises the steps of:

20   preparing a text which is described in a natural language by means of a text description assistant system;

converting said text into an intermediate knowledge code;

converting said intermediate knowledge code into a knowledge code; and

inputting said knowledge code into said knowledge-based system, and

in that said text describing assistant system is adapted to prepare said text by inputting describing items in accordance with

5   a preliminarily provided text description procedure, said steps of converting said text into said intermediate knowledge code converts the description of a formal text into said intermediate knowledge code which corresponds to said formal text and does not depend upon said knowledge-based system, said step of converting said intermediate

10   knowledge code into said knowledge code converts said intermediate knowledge code into said knowledge code which can be used in said knowledge-based system in accordance with knowledge code generating rules.

15   12.   A process for converting a knowledge code used in a knowledge-based system into a text which is described in a natural language, characterized in that said knowledge code is output from said knowledge-based system, said output knowledge code being converted into said intermediate knowledge code which does not depend

20   upon said knowledge-based system by using an intermediate knowledge code converting unit and said intermediate knowledge code being converted into said text corresponding to said intermediate knowledge code by using a document description generating unit.

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13.   A process for producing a knowledge code as claimed in claim 11, wherein at the steps of preparing a text which describes the knowledge of an object field in a natural language by using said text description assistant system and converting said text into said intermediate knowledge code, said process further includes the step of preparing an intermediate knowledge code which does not depend upon said knowledge base system, from the description of the text which is described in a natural language and is prepared without using said text description assistant system in accordance with intermediate knowledge code generating rules.

14.   A process for generating a CAD knowledge code used in a knowledge-based CAD, characterized in that said process comprises the step of:

preparing a design procedure document which is described in a natural language by a design procedure document description assistance system; converting said design procedure document into an intermediate knowledge code, converting said intermediating code into a CAD knowledge code and inputting said CAD knowledge code into said knowledge-based CAD,

said design procedure document description assistance system being adapted to describe said design procedure document by selecting and inputting description items of said design procedure document in accordance with preliminarily provided description rules,

said step of converting said design procedure document into said representation code converting the description of said design procedure document into said intermediate knowledge code which corresponds to the description of said design procedure document and does not depend upon said knowledge-based CAD,

said step of converting said intermediate knowledge code into said knowledge code converting said intermediate knowledge code into said CAD knowledge code which can be used in said knowledge-based CAD in accordance with knowledge code generating rules.

15. A process for generating a knowledge code as claimed in claim 14, wherein said design procedure document description assistance system selects formal texts which constitute preliminarily provided design procedure document, a number of formal texts are preliminarily classified and prepared so that the design procedure document can be prepared by sequentially selecting the description procedure of said formal texts and each formal text of said design procedure document corresponds to the intermediate knowledge code.

16. A process for converting a CAD knowledge code used in a CAD knowledge-based system into a design procedure document which is described in a natural language, characterized in that said CAD knowledge code is output from said knowledge-based CAD system, said output CAD knowledge code being converted into said intermediate

knowledge code which does not depend upon said knowledge-based system

by using an intermediate knowledge code converting unit and said

intermediate knowledge code being converted into said design procedure

document comprising formal texts corresponding to said intermediate

5   knowledge code by using a document description generating unit.

17.   A process for generating a knowledge code as claimed

in claim 14, wherein at the steps of preparing the design procedure

document which describes the knowledge of an object field in a natural

10   language by using the design procedure document description assistance

system, and converting said design procedure document into said

intermediate knowledge code, said process further comprises the

step of conducting a morphological analysis or syntactic analysis

of the description of said design procedure document which is prepared

15   without using said design procedure document description assistance

system and is described in a natural language and preparing said

intermediate knowledge code which does not depend on said

knowledge-based CAD in accordance with said intermediate knowledge

code generating rules based upon morphological information or

20   syntactic information which is obtained by said morphological analysis

or syntactic analysis.

18.   A process for generating CAD knowledge codes as claimed

in claim 17, wherein in order to convert said intermediate knowledge

code into said CAD knowledge codes used for a plurality of different said knowledge-based CADs, said intermediate knowledge code is converted into the plurality of different said CAD knowledge codes in accordance with a plurality of different knowledge code generating

5   rules.

19.   A knowledge code generating system for generating a knowledge codes used in a knowledge-based system, characterized in that

10   said knowledge code generating system comprises a text generating unit for preparing a text which is described in a natural language by means of a text description assistance system, an intermediate knowledge code generating unit for converting said text into an intermediate knowledge code, a knowledge code converting

15   unit for converting said intermediate code into a knowledge code and a knowledge code input unit for inputting said knowledge code into said knowledge-based system,

said text generating unit is adapted to describe said text by using a text preparing tool which prepares a text using formal

20   texts by inputting description items in accordance with preliminarily provided text description procedure,

said intermediate code converting unit is adapted to convert the description of said formal text of said text into said intermediate knowledge code which corresponds to said formal text and does not

depend on said knowledge-based system, and

said knowledge code converting unit is adapted to convert said intermediate knowledge code into said knowledge code which can be used in said knowledge-based system by using a knowledge code

5   generating rules.

20.   A knowledge code converting system for converting a knowledge code used in a knowledge-based system into a text which is described in a natural language, characterized in that

10   said knowledge code converting system comprises a knowledge code output unit for outputting said knowledge code from said knowledge-based system, an intermediate knowledge code converting unit for converting said output knowledge code into an intermediate knowledge code which does not depend on said knowledge-based system

15   and a document description generating unit for converting said intermediate knowledge code into a text including said intermediate knowledge code and corresponding formal texts, which is described in a natural language.

20   21.   A knowledge code generating system for generating a knowledge code used in said knowledge-based system as claimed in claim 18, further comprising a unit for preparing an intermediate knowledge code which represents the knowledge of an object field and does not depend upon said knowledge-based system from the

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description of a text which is prepared without using said text description assistance system and is described in a natural language in accordance with an intermediate knowledge code generating rules in addition to said text generating unit for preparing the text

5 which is described in a natural language by the text description assistance system and said intermediate knowledge code generating unit for converting said text into said intermediate knowledge code.

22.   A knowledge generating system which is used in a
10 knowledge-based CAD, comprising a design procedure document generating unit for preparing a design procedure document which is described in a natural language by a design procedure document description assistance system, and an intermediate knowledge code generating unit for converting said design procedure document into
15 an intermediate knowledge code, a CAD code converting unit for converting said intermediate knowledge code into a CAD knowledge code and a knowledge code input unit for inputting said CAD knowledge code into said knowledge-based CAD,

said design procedure document generating unit is adapted to
20 describe said design procedure document by using a design procedure document preparing tool for preparing a design procedure document by inputting design items in accordance with preliminarily provided description rules of the design procedure document,

said intermediate knowledge code generating unit is adapted

to convert the description of said design procedure document into said intermediate knowledge code which corresponds to the description of said design procedure document and does not depend on said knowledge-based CAD, and said CAD code converting unit is adapted to convert said intermediate knowledge code into said knowledge code which can be used in said knowledge-based CAD by using a knowledge code generating rules.

23.   A knowledge code generating system for generating a knowledge code as claimed in claim 22, wherein said design procedure document generating unit selects formal texts which constitute preliminarily provided design procedure document, and a number of said formal texts are preliminarily classified and prepared so that the design procedure document can be prepared by sequentially selecting the description procedure of said formal texts and each description item of said design procedure document corresponds to the intermediate knowledge code.

24.   A system for converting a CAD knowledge code used in a knowledge-based CAD into a design procedure document which is described in a natural language, characterized in that said system comprises

an intermediate knowledge code converting unit for outputting said knowledge CAD code from said knowledge-based CAD to convert

said CAD knowledge code into said intermediate knowledge code which does not depend on said knowledge-based CAD, and

a document description generating unit for converting said intermediate knowledge code into said design procedure document

5   including said intermediate knowledge code and corresponding formal text.

25.   A system for generating a knowledge code as claimed in claim 22, wherein in addition to the design procedure document

10   preparing unit for preparing the design procedure document which is described in a natural language and the intermediate knowledge code generating unit for converting said design procedure document into said intermediate knowledge code, said system further comprises a unit for   conducting a morphological analysis or syntactic analysis

15   of the description of said design procedure document which is prepared without using said design procedure document description assistance system and is described in a natural language and for preparing said intermediate knowledge code which does not depend on said knowledge-based CAD in accordance with said intermediate knowledge

20   code generating rules based upon morphological information or syntactic information which is obtained by said morphological analysis or syntactic analysis.